REMARKS

Claims 1-102 are pending in the present application. Claims 1-13, 18-30, 35-47, 52-63, 69-81, and 86-97 have been rejected. Claims 14-17, 31-34, 48-51, 64-68, 82-85, and 98-102 have been objected to.

Allowable Subject Matter

The Examiner objected to claims 14-17, 31-34, 48-51, 64-68, 82-85, and 98-102 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have rewritten claims 14-17, 31-34, 48-51, 64-68, 82-85, and 98-102 in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the Examiner for the allowable subject matter and respectfully submit that claims 14-17, 31-34, 48-51, 64-68, 82-85, and 98-102 are in condition for allowance.

Claims Rejections under 35 U.S.C. § 102(b)

Claims 1, 4-7, 12, 13, 18-20, 26-29, 35, 38-41, 46, 47, 52-54, 60, 61, 69, 72-75, 80, 81, 86-88, 94 and 95 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,615,409 to Forssen (hereinafter "Forssen"). Applicants respectfully disagree for the reasons and explanations set forth below.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (Aug. 2001) (*quoting Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Id.* (*quoting Richardson v. Suzuki Motor Co.,* 868 F.2d 1226, 1236, 9 USPQ2d 1051, 1053 (Fed. Cir. 1987)). In addition, "the reference must be enabling and describe the applicant's invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." *In re Paulsen,* 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

Applicants respectfully submit that claims 1, 4-7, 12, 13, 18-20, 26-29, 35, 38-41, 46, 47, 52-54, 60, 61, 69, 72-75, 80, 81, 86-88, 94 and 95 are not anticipated by Forssen for the reasons and explanations set forth below.

With respect to amended claim 1, Applicants respectfully submit that Forssen does teach or suggest all the limitations of claim 1. In particular, Forssen does not teach or suggest the following element of claim 1: "receiving a first signal using the first beam; and detecting a second signal using the second beam."

Forssen discloses a method and apparatus for transmitting and receiving signals using two classes of channels. (Title). The first class of channels has a disturbance situation so that the base station can receive signals using wide antenna lobes and transmit signals to the mobile station using a wide antenna lobe. (Col. 3, lines 30-35). The second class of channels has a disturbance situation so that the base station must transmit signals using narrow antenna lobes in order to obtain acceptable quality. (Col. 3, lines 35-37). Class one channels are wide lobe channels broadcast over a wide area, so that a plurality of mobiles can receive broadcast messages from the base station independently of their position. (Fig. 2(a), Col. 3, lines 53-56). Class two channels are narrow lobe channels broadcast to a limited area using the spatial filters of the adaptive antenna array to limit the direction of the channel. (Fig. 2(b), Col. 3, lines 56-60). Class one channels are used for setting up new calls and for handovers between base stations. (Col. 4, lines 15-16). The mobile station sends an access message on a random access control channel, which is a class one channel, to a base station. (Col. 4, lines 18-20). The message is detected and used as a training sequence for the antenna algorithm. (Col. 4, lines 20-22). The base station then assigns the mobile station an available class one station for the requested call. (Col. 4, lines 31-32). Once the position and power level of the mobile are determined the mobile station is assigned a class two channel. (Col. 5, lines 11-13). Furthermore, as the position of the mobile station is gradually determined the base station can gradually reduce the antenna lobe width of the assigned class two channel. (Col. 5, lines 61-63). Thus, Forssen shifts the call from a wide antenna lobe channel to a narrower antenna lobe channel and then further narrows the lobe. Therefore, Forssen does not disclose "receiving a first signal using the first beam; and detecting a second signal using the second beam."

Because Forssen does disclose all the limitations of amended claim 1, Applicants submit that amended claim 1 is not anticipated by Forssen.

Since claim 4 depends from claim 1 and includes additional limitations, claim 4 is also not anticipated by Forssen.

Because claim 5 depends from claim 1 and includes additional limitations, claim 5 is also not anticipated by Forssen.

Since claim 6 depends from claim 1 and includes additional limitations, claim 4 is also not anticipated by Forssen.

Because claim 7 depends from claim 6 which in turn depends from claim 1, and includes additional limitations, claim 7 is also not anticipated by Forssen.

Since claim 12 depends from claim 1 and includes additional limitations, claim 4 is also not anticipated by Forssen.

Because claim 13 depends from claim 12 which in turn depends from claim 1, and includes additional limitations, claim 13 is also not anticipated by Forssen.

Claim 18 has been amended to include "a processor configured to control the antenna to search for a first signal with the first beam and receive a first signal using the first beam and to receive a second signal with the second beam." Applicants respectfully submit that amended claim 18 is allowable for the reasons given above for claim 1.

Since claim 19 depends from claim 18 and includes additional limitations, claim 19 is also not anticipated by Forssen.

Because claim 20 depends from claim 18 and includes additional limitations, claim 20 is also not anticipated by Forssen.

Since claim 26 depends from claim 18 and includes additional limitations, claim 26 is also not anticipated by Forssen.

Because claim 27 depends from claim 26 which in turn depends from claim 18, and includes additional limitations, claim 27 is also not anticipated by Forssen.

Because claim 28 depends from claim 27 which in turn depends indirectly from claim 18, and includes additional limitations, claim 28 is also not anticipated by Forssen.

Because claim 29 depends from claim 28 which in turn depends indirectly from claim 18, and includes additional limitations, claim 29 is also not anticipated by Forssen.

Claim 35 has been amended to include "forming multiple beam patterns comprising a first beam and a second beam between the first device and a second device to search for the transmitted signal within a region; receiving a first signal using the first beam; and detecting a second signal using the second beam." Applicants respectfully submit that amended claim 35 is allowable for the reasons given above for claim 1.

Because claim 38 depends directly from claim 35 and includes additional limitations, claim 38 is also not anticipated by Forssen.

Since claim 39 depends directly from claim 35 and includes additional limitations, claim 39 is also not anticipated by Forssen.

Because claim 40 depends directly from claim 35 and includes additional limitations, claim 40 is also not anticipated by Forssen.

Since claim 41 depends from claim 40 which in turn depends from claim 35, and includes additional limitations, claim 41 is also not anticipated by Forssen.

Because claim 46 depends directly from claim 35 and includes additional limitations, claim 46 is also not anticipated by Forssen.

Since claim 47 depends from claim 46 which in turn depends from claim 35, and includes additional limitations, claim 47 is also not anticipated by Forssen.

Claim 52 has been amended to include "form multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; detecting a second signal using the second beam." Applicants respectfully submit that claim 52 is allowable for the reasons given above for claim 1.

Since claim 53 depends directly from claim 52 and includes additional limitations, claim 53 is also not anticipated by Forssen.

Because claim 54 depends directly from claim 52 and includes additional limitations, claim 54 is also not anticipated by Forssen.

Since claim 60 depends directly from claim 52 and includes additional limitations, claim 60 is also not anticipated by Forssen.

Because claim 61 depends from claim 60, which in turn depends from claim 52, and includes additional limitations, claim 61 is also not anticipated by Forssen.

Claim 69 has been amended to include "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device to cover a region; receiving a first signal using the first beam; and detecting a second signal using the second beam." Applicants respectfully submit that claim 69 is allowable for the same reasons given above for claim 1.

Since claim 72 depends directly from claim 69 and includes additional limitations, claim 72 is also not anticipated by Forssen.

Because claim 73 depends directly from claim 69 and includes additional limitations claim 73 is also not anticipated by Forssen.

Since claim 74 depends directly from claim 69 and includes additional limitations, claim 74 is also not anticipated by Forssen.

Because claim 75 depends indirectly from claim 69 and includes additional limitations claim 73 is also not anticipated by Forssen.

Since claim 80 depends directly from claim 69 and includes additional limitations, claim 80 is also not anticipated by Forssen.

Because claim 81 depends indirectly from claim 69 and includes additional limitations claim 81 is also not anticipated by Forssen.

Claim 86 has been amended to include: "means for forming multiple beams through an antenna to search for a first signal; means for receiving a first signal using the first beam; and means for receiving the second signal using the second beam." Applicants submit that claim 86 is allowable for the same reasons given above for claim 1.

Since claim 87 depends directly from claim 86 and includes additional limitations, claim 87 is also not anticipated by Forssen.

Because claim 88 depends directly from claim 86 and includes additional limitations, claim 88 is also not anticipated by Forssen.

Since claim 94 depends directly from claim 86 and includes additional limitations, claim 94 is also not anticipated by Forssen.

Because claim 95 depends indirectly from claim 86 and includes additional limitations claim 95 is also not anticipated by Forssen.

Claim Rejections under 35 U.S.C. § 103

Claims 2, 3, 8-11, 21-25, 36, 37, 42-45, 55-59, 60, 70, 71, 76-79 and 89-93 were rejected as being unpatentable over Forssen in view of U.S. Patent 6,349,217 to Honcharenko (hereinafter "Honcharenko"). This rejection is respectfully traversed.

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure." In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that a prima facie case of obviousness has not been established regarding claims 2, 3, 8-11, 21-25, 36, 37, 42-45, 55-59, 60, 70, 71, 76-79 and 89-93 because the prior art cited does not teach or suggest all the claim limitations.

Claim 2 depends from amended claim 1 which includes the limitation "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam." The prior art cited does not teach or suggest this claim limitation.

Forssen does not teach or suggest limitation "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam." As shown above, Forssen may teach or suggest a base station transmitting signals to a mobile station in a first class of channels in a wide antenna lobe. After determining the position of the mobile station, the base station then transmits signals to and receives signals from the mobile station on a second class channel with a narrow lobe. The lobe may be further narrowed as the position of the mobile is determined. (Forssen, Abstract). This is not "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam."

Honcharenko also does not teach or suggest the element of "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam." Honcharenko teaches a fixed wireless communication system that embodies two

transmission modes. First, a high rate, single carrier scheme is implemented for downlink transmissions from each base station to covered subscriber stations. Second, for uplink transmissions from a subscriber to an assigned base station, a multi-carrier, variable bandwidth scheme is implemented. Preferably, separate frequency bands are allocated for the uplink and downlink transmissions. (Col. 2, lines 20-34). The antennas used at the base stations are array antennas that may be electronically steered in the direction a specific subscriber station. (Col. 2, lines 61-64). The antenna beam is steered by adjusting complex weights in the base station's beamformer. (Col. 6, lines 28-31). Honsharenko also does not teach or suggest "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam."

Furthermore, combining Forssen and Honcharenko does not result in Applicants' invention. Combing Forssen and Honcharenko would result in a system that switched from one channel to another as in Forssen after a beam steering operation performed according to Honcharenko. Thus, the combination of Forssen and Honcharenko fails to teach the limitation of "forming multiple beam patterns comprising a first beam and a second beam between a first device and a second device; receiving a first signal using the first beam; and detecting a second signal using the second beam." Applicants respectfully request that the rejection of claim 2 be withdrawn.

Claim 3 depends from claim 1 and is allowable for the same reasons given above for claim 1 and also for the reasons given above for claim 2.

Claim 8 depends indirectly from claim 1 and is allowable for the same reasons given above for claims 1 and 2.

Claim 9 depends directly from claim 1 and is allowable for the same reasons given above for claims 1 and 2.

Claim 10 depends indirectly from claim 1 and is allowable for the same reasons given above for claims 1 and 2.

Claim 11 depends indirectly from claim 1 and is allowable for the same reasons given above for claims 1 and 2.

Claim 21 depends directly from claim 18 and is allowable for the same reasons given above for claims 1 and 2.

Claim 22 depends directly from claim 18 and is allowable for the same reasons given above for claims 1 and 2.

Claim 23 depends directly from claim 18 and is allowable for the same reasons given above for claims 1 and 2.

Claim 24 depends indirectly from claim 18 and is allowable for the same reasons given above for claims 1 and 2.

Claim 25 depends indirectly from claim 18 and is allowable for the same reasons given above for claims 1 and 2.

Claim 36 depends directly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 37 depends directly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 42 depends indirectly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 43 depends directly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 44 depends indirectly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 45 depends indirectly from claim 35 and is allowable for the same reasons given above for claims 1 and 2.

Claim 55 depends directly from claim 52 and is allowable for the same reasons given above for claims 1 and 2.

Claim 56 depends directly from claim 52 and is allowable for the same reasons given above for claims 1 and 2.

Claim 57 depends directly from claim 52 and is allowable for the same reasons given above for claims 1 and 2.

Claim 58 depends indirectly from claim 52 and is allowable for the same reasons given above for claims 1 and 2.

Claim 59 depends indirectly from claim 52 and is allowable for the same reasons given above for claims 1 and 2.

Claim 70 depends directly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 71 depends directly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 76 depends indirectly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 77 depends directly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 78 depends indirectly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 79 depends indirectly from claim 69 and is allowable for the same reasons given above for claims 1 and 2.

Claim 89 depends directly from claim 86 and is allowable for the same reasons given above for claims 1 and 2.

Claim 90 depends directly from claim 86 and is allowable for the same reasons given above for claims 1 and 2.

Claim 91 depends directly from claim 86 and is allowable for the same reasons given above for claims 1 and 2.

Claim 92 depends indirectly from claim 86 and is allowable for the same reasons given above for claims 1 and 2.

Claim 93 depends indirectly from claim 86 and is allowable for the same reasons given above for claims 1 and 2.

Claim Rejections under 35 U.S.C. § 103

Claims 30, 52, 63, 96 and 97 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Forssen and Honcharenko in view of U.S. Patent 6,249,251 to Chang (hereinafter "Chang"). Applicants respectfully traverse this rejection.

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure." In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicants respectfully submit that a prima facie case of obviousness has not been established regarding claims 30, 62, 63, 96 and 97 because the prior art cited does not teach or suggest all the claim limitations.

Specifically, neither Forssen, Honcharenko nor Chang teaches the limitation "wherein the processor further comprises a searcher configured to search for the first signal as a function of the combined weighted energy." The Examiner asserts that Chang teaches that "the processor further comprises a search configured to search for the first signal as a function of the combined weighted energy" at col. 9, lines 4-21. *See* Office Action, page 11. Applicants respectfully disagree. This portion of Chang describes the embodiment of a demodulator having a selection of a symbol-level beamforming in the CDMA adaptive array system. The demodulator described in Chang is significantly different from the claimed limitation of "wherein the processor further comprises a searcher configured to search for the first signal as a functions of the combined weighted energy" as found in claim 30. Applicants therefore submit that claim 30 is allowable over the cited prior art.

Furthermore, combining Forssen, Honcharenko and Chang does not result in Applicants' invention. Combing Forssen, Honcharenko and Chang would result in a system that switched from one channel to another as in Forssen after a beam steering operation performed according to Honcharenko and then demodulates the signal using the demodulator according to Chang. Thus, the combination of Forssen, Honcharenko and Chang fails to teach the limitation of "the processor further comprises a searcher configured to search for the first signal as a function of the combined weighted energy." Applicants respectfully request that the rejection of claim 30 be withdrawn.

Additionally, claim 30 depends indirectly from claim 18 which includes language similar to the language of claim 1. Applicants therefore submit that claim 30 is allowable for the same reasons given above for claim 1.

Claim 62 contains the same limitation as claim 30; therefore, Applicants submit that claim 62 is allowable for the same reasons given above for claim 30.

Claim 63 is allowable for the same reasons given above for claim 30.

Claim 96 contains the same limitation as claim 30; therefore, Applicants submit that claim 96 is allowable for the same reasons given above for claim 30.

Claim 97 depends directly from allowable claim 96 and includes additional limitations. Therefore, Applicants submit that claim 97 is allowable for the same reasons given above for claims 96 and 30.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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